

## **RAW SEQUENCE LISTING**

**The Biotechnology Systems Branch of the Scientific and Technical  
Information Center (STIC) no errors detected.**

Application Serial Number: 10/617,316

Source: \_\_\_\_\_

Date Processed by STIC: \_\_\_\_\_

# ***ENTERED***



IFWO

## RAW SEQUENCE LISTING

DATE: 03/01/2005

PATENT APPLICATION: US/10/617,316

TIME: 10:35:15

Input Set : N:\Crf4\Refhold\10\_folder\J617316.raw

Output Set: N:\CRF4\02282005\J617316.raw

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1 <110> APPLICANT: Havukkala, Ilkka J
2   Glenn, Matthew
3   Grigor, Murray R.
4   Molenaar, Adrian J.
5 <120> TITLE OF INVENTION: Compositions Isolated From Bovine
6   Mammary Gland and Methods For Their Use.
7 <130> FILE REFERENCE: 11000.1046U1C1
8 <140> CURRENT APPLICATION NUMBER: US/10/617,316
9 <141> CURRENT FILING DATE: 2003-07-09
10 <150> PRIOR APPLICATION NUMBER: US 09/699,146
11 <151> PRIOR FILING DATE: 2000-10-27
12 <150> PRIOR APPLICATION NUMBER: US 60/162,701
13 <151> PRIOR FILING DATE: 1999-10-29
14 <160> NUMBER OF SEQ ID NOS: 262
15 <170> SOFTWARE: FastSEQ for Windows Version 4.0
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19 <212> TYPE: DNA
20 <213> ORGANISM: Bovine
21 <400> SEQUENCE: 1
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24   aatgggtgtg tgatgagccc aaggagcaca ccgtggtcgg ccctgcgtc gcagcttacc      180
25   ggccggaaga cacgtttggc ccagacccaa ccattgatcc agccaactgc ctggtccaga      240
26   ccacagagtg gagtgcctgt tccaagacct gcggaatggg catctccacc cgggttacca      300
27   atgacaacgc attctgcagg ctggagaagc agagccgcct ctgcatggtc aggccttgcg      360
28   aagctgacct ggaggagaac attaagaaag gcaaaaagtg catccggacc cccaaaatct      420
29   ccaagcctat caagtttgag ctttctggct gcaccagcat gaagacatac cgagctaaat      480
30   tctgcggagt gtgcacagac gggcggtgct gcacccccca cagaaccacc acccttcccg      540
31   tggagttcaa gtgtcctgat ggggaggtca tgaagaagag catgatgttc atcaagacct      600
32   gtgcctgcca ttacaactgc cccggagaca atgacatctt cgagtcactg tactacagga      660
33   agatgtatgg agacatggcc taaagccaga gacagtgaga cacgtgaaca ttttaggctg      720
34   tcacttgaat cgattcacat ctcatttttg tgtacacgtg atttcagtgg cacaagttat      780
35   ttaaattctgt gcttctaact g                                     801
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38 <211> LENGTH: 511
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40 <213> ORGANISM: Bovine
41 <400> SEQUENCE: 2
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43   cacgcggaaa ccaaccgcca ggaaagagge gcggcgctga gccgagctaa cctgaggaaa      120
44   ccgctgccgc tgcagccgag cgcgtgggcc cgccggggca ttagttcgtc tgcgcgcagc      180
45   cccggccccga ctttccagag ccatgagtta cggtcgcccc cctcccgatg tggagggcat      240

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46      gacctctctc aaggtggata acctaacctc ccgcacctca cccgacaccc tgaggcgcggt      300
47      gttcgagaag tacgggcgcg tcggcgatgt gtacatcccg cgggaccgct acaccaagga      360
48      gtcccgcggc ttgccttcg tccgcttcca cgacaagcgc gacgccgagg acgccatgga      420
49      tgccatggac ggagccgtac tggacggccg cgagctgcgg gtgcagatgg cgcgctacgg      480
50      ccgcccccg attcgcacca tagccgcggg g                                     511
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59      aatgggtgtg tgatgagccc aaggagcaca ccgtggtcgg ccctgcgctc gcagcttacc      180
60      ggccggaaga cacgtttggc ccagacccaa ccatgatccg agccaactgc ctgggtccaga      240
61      ccacagagtg gagtgcctgt tccaagacct gcggaatggg catctccacc cgggttacca      300
62      atgacaacgc attctgcagg ctggagaagc agagccgcct ctgcatggtc aggccttgcg      360
63      aagctgacct ggaggagaac attaagaaag gcaaaaagtg catccggacc cccaaaatct      420
64      ccaagcctat caagtttgag ctttctggct gcaccagcat gaagacatac cgagctaaat      480
65      tctgcggagt gtgcacagac gggcggtgct gcacccccca cagaaccacc acccttcccg      540
66      tggagttcaa gtgtcctgat ggggaggtca tgaagaagag catgatgttc atcaagacct      600
67      gtgcctgcca ttacaactgc cccggagaca atgacatctt cgagtcactg tactacagga      660
68      agatgtatgg agacatggcc taaagccaga gacagtgaga cacgtgaaca ttttaggctg      720
69      tcacttgaat cgattcacat ctcatTTTTT tgtacacgtg atttcagtgg cacaagttat      780
70      ttaaattctgt gcttctaact g                                     801
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79      gcccaacacg tccttctgcg acccctgat gtgcgtggaact gacctgttca gcaatgaaga      180
80      gtattaccct gcctttgagc atcagacagc ttgcgactcc tactggacat ccgtccaccc      240
81      cgaatactgg acgaagcgcc acgtctggga atggctccag ttctgctgtg accagtacaa      300
82      gctggacgcc aactgcatct ctttctgcca ttccaacatc agtggcctgc agctgtgcgg      360
83      catgacacag gaggagttca tggaggcgcc cggcgctgtg ggggagtatc tgtactttat      420
84      cctccagagc atccgctcac aaggttactc cttttttaat gatcctgatg agaccaaggc      480
85      caccctcaaa gactatgctg attccagttg cttgaaaaca agtggcatca aaagtcaaga      540
86      ctgtcacagt catagtcgaa caagcctcca gagttctcat ctatgggaat ttgtgcgaga      600
87      tctgcttcta tctcctgagg aaaactgcgg cattctggaa tgggaagata aggaaca      657
89 <210> SEQ ID NO: 5
90 <211> LENGTH: 1107
91 <212> TYPE: DNA
92 <213> ORGANISM: Bovine
93 <400> SEQUENCE: 5
94      gcaaagtgac tcagttatac ctatgcatgt atctcttctt tttcaaattc ttttccatt      60
95      tggctgttac ataattatga aactataccc ctgtctcaga ctgctgcagc ctgagttcta      120
96      atctaaccct gcattgattt catgctttgc tttctgctct tcataagctg tagtcccttt      180
97      gcttttccct gtgtcctttc tgggtctgttc tccacactag ccggagggat cttcttaacg      240

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98      tgtggatcctt gtcaaagtct tccgtcttca cttgttgaat aaaatccctc gccattctca      300
99      ggtgcccacg tgacttgta gacagctagct gcccccgagg caacacctcc caccctccct      360
100     agcacccgga ggtccctcgg gctttgcact gctgctcctt ccctctgaaa ccctctccca      420
101     cctcctgacg ttagcatgaa tgtgttcctc taggagaccc gctctgcccc ccccatctag      480
102     atgcagcagg agctttcgcc tgccctcatt ctctaattgcc tccttccttc gtaacactta      540
103     caacaggggc gattcgtggt tcaacttgat tttcctcacc ctgtagtcct cagcctctac      600
104     ctgagcgagg accaagtctg ccttgtctcc agctttctgt ttccagctca gaacctggaa      660
105     tctgacacac agttgggccc cagtgttgaa tacaattctt cctgaaacct actaattatc      720
106     cccagaacag ccggcaccag ttgtctcctg ccacgaagggt gtccaattaa tagctgctca      780
107     tttggtgtga cttgagggtct gaatgtggcc tctagatttc ttctgcagc tgtcaatcac      840
108     tctgttgacg atgctgattc cagttgcttg aaaacaagtg gcatcaaaag tcaagactgt      900
109     cacagtcata gtcgaacaag cctccagagt tctcatctat ggggaatttg gcgagatctg      960
110     cttctatctc ctgaggaaaa ctgcggcatt ctggaatggg aagataggga acaagggtatt      1020
111     tttcgggtgg ttaaatcaga agccctggcg aagatgtggg gacaaaggaa gaaaaatgac      1080
112     agaatgacgt acgaaaagct gagcaga      1107
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115 <211> LENGTH: 305
116 <212> TYPE: DNA
117 <213> ORGANISM: Bovine
118 <400> SEQUENCE: 6
119     ctggcaactc tggctcagag agtgaaggag gttttacccc atgttccact gggcgtcac      60
120     cagagagacc tagccaggac tggctgtgta gacttgacca tcaactaatct gcttgaggga      120
121     gccgtagctt tcatgcctga agacatcact gaggggaccc aatcccttgc cacagcctcc      180
122     actcccaagt tccccagctc tggcccggca acccctcagc ccacagccct aacatttgcc      240
123     aagtccctct gggcccggca ggagagtcta caggagcgaa agcaggcgct gtatgaatgc      300
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126 <210> SEQ ID NO: 7
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128 <212> TYPE: DNA
129 <213> ORGANISM: Bovine
130 <400> SEQUENCE: 7
131     ctccctccct cagaggatgt cctccttcca gctcaacctc aaccgcgtca aggagcctct      60
132     cggcttcac caaagtccctg agtggattgc ttctatcttt gcttttgcta cctgtggagg      120
133     ttttaagggc aaaacagaaa ttcaagtgtc ttgtactacg ggtcctgaga ataaaacgat      180
134     tacagctgct tttggttacc cattcagggt gaatgaagca      220
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137 <211> LENGTH: 565
138 <212> TYPE: DNA
139 <213> ORGANISM: Bovine
140 <400> SEQUENCE: 8
141     accaggcaac ccagaaagcc aggcgtggag actgatcctg cgggaggaaa gggttcatca      60
142     tggcggatga tctaaaacga ttccgtgata aaaaattacc gagtgttgag gggctccatg      120
143     ctattgttgt gtcagataga gatggagtgc ctgtcatcaa agtggccaat gataatgctc      180
144     cagagcatgc tttgagacct ggtttcttat caacttttgc ccttgcaaca gaccaaggaa      240
145     gcaaactcgg actttcaaaa aataaaagta tcatctgtta ctataatacc taccagggtg      300
146     ttcaattcaa tcgtttacct ttggtagtga gtttcatagc cagcagcaat gctaatacag      360
147     gactaattgt cagcctggaa aaggaacttg ctccattatt tgaagaattg agacaagttg      420
148     tggaagtttc ttaatctgga gttttcttca tcatatcaga cacaatatca atccagcaat      480
149     ctttaggcca cagtgcact tgtatccatg tactcaagga cccctttttt ccactttact      540

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Output Set: N:\CRF4\02282005\J617316.raw

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153 <211> LENGTH: 436
154 <212> TYPE: DNA
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156 <400> SEQUENCE: 9
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158      tccgccagca tgaccgcgtt gatgaggtct cgcacagcgt caggctccag cgtaacgtcc      120
159      ctggagggtg cccgcagccg ctgcataacc agcgagggca ctgcagccg ctgcacacc      180
160      agcgagggca cgcggctgga catcatcccc aactccggcg gccccgggag cagcgccggg      240
161      cccaactcca cggaggtgtc ctgctaggcg gcctcggggc cggccggcct cccctggact      300
162      ctgggaccga tcgctgtagc tgccctcctt ccggccccc tccccacccc tgcttgccaa      360
163      ccgcacgtta actcgtaact cgggtattaat ccaaagctta tttgtacaag tgagctctgg      420
164      tgacgacacg gtgaga                                          436
166 <210> SEQ ID NO: 10
167 <211> LENGTH: 315
168 <212> TYPE: DNA
169 <213> ORGANISM: Bovine
170 <400> SEQUENCE: 10
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172      gtttacatct cgaatggaca agtggtggac agcaggagtc agtcccatg gagattatct      120
173      tttataacag atttcttctg gggaatagct gagtttgtgg ttttgttttt cagaactctg      180
174      cttcaacaag atgtgaaaaa gagaagaggc tacggaagct catctgattc cagatatgat      240
175      gacggaagag ggccaccagg aaaccccccc agaagaagaa tgggtcgaat taatcatctg      300
176      cagggcccta atcct                                          315
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181 <213> ORGANISM: Bovine
182 <400> SEQUENCE: 11
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185      tcagtcatgt tcggctacgc ggtgaggcgc gccctgcgca agagtaagac ccttcgtac      180
186      ggagttccca tgttggtgct gattgttggg ggttcttttg gtcttcgtga gttttctcaa      240
187      attcgttatg atgctgtgaa gattaaaatt gatcctgagt tagaaaaaaa gctgaaaatg      300
188      aataaagtgt cattggaatc agaatatgag aaa                          333
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191 <211> LENGTH: 930
192 <212> TYPE: DNA
193 <213> ORGANISM: Bovine
194 <400> SEQUENCE: 12
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197      gggtcaccca cacggtgccc atctatgagg ggtacgccct tccccatgcc atcctgcgtc      180
198      tggacctggc tggccgggac ctgacggact acctcatgaa gatcctcacg gagcgtggct      240
199      acagcttcac caccacggcc gagcgggaaa tcgtccgtga catcaaggag aagccttgct      300
200      acgtggccct ggacttcgag caggagatgg ccaccgcggc ctccagctcc tccctggaga      360
201      agagctacga gcttcctgac gggcaggtca tcaccatcgg caatgagcgg ttccgctgcc      420
202      ctgaggctct cttccagcct tccttcctgg gcatggaatc ctgcggcatt cagaaacta      480

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203	ccttcaattc catcatgaag tgtgacgtcg acatccgcaa ggacctctac gccaacacgg	540
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205	ctgccctggc acccagcaca atgaagatca agatcatcgc gccccctgag cgcaagtact	660
206	ccgtgtggat tggcggtcc atcctggcct cgctgtccac cttccagcag atgtggatca	720
207	gcaagcagga gtacgatgag tccggccccct ccatcggtcca ccgcaaagtc ttctaggcgg	780
208	actgttagct gcgttacacc ctttttcttg acaaaacctt acttgcgag aaaacgagat	840
209	gagattggca tggctttatt tgtttttttt ttttgtcttt tttgattttt tttttttggc	900
210	gcttgactca ggatttaaaa actggaacgg	930
212	<210> SEQ ID NO: 13	
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214	<212> TYPE: DNA	
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218	cgagcccagc ctgtccgtgc agccaccagc cctcgaggac ctgctcctgg gctccaacgc	120
219	cagcctcacg tgcacactga gtggcctgaa aagcgccgag ggcgccagct tcacctggaa	180
220	cccagacagg tgggaagacc cgtccagggt gtgcgccaaag cgtgactcct gtggtgcta	240
221	cagcgtgtcc agcgtcctgc cgggctgtgc cgatccctgg aacagtggac agactttctc	300
222	ctgctctgtc acccaccctc agtccaagag ttactgacc gccaccatca agaaagactt	360
223	agggaacacg ttccggcctc aggtccacct gctgcgcgcg cgtcgaggag agctggccct	420
224	caacgagctg gtgacgtga cgtgcctggg gcggggattc aaccccagg aggtgctggg	480
225	gcgttggtg cagggcaatc aagagctgcc ccgcgagaag tatctgacct gggccccctg	540
226	cccagagctg ccagagcgta ccaccttcgc cgtgaccaac gtgctacgcg tggacgccga	600
227	ggtctggaag cagggggaca ccttctctgc atggtgggc	639
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236	gtcatgggtc tgagccccct gtttttggtc ttcatactgg gtctgggtct gaccccagtg	180
237	gccccggctc aagatgacta cagatacata cacttcttga cccagcacta cgatgccaaa	240
238	ccaaagggcc ggaatgacga atattgtttt aacatgatga aaaatcgacg cctgaccaga	300
239	ccttgcaaag accgcaacac ctttattcat ggcaacaaga atgacattaa ggccatctgt	360
240	gaggacagaa atggacagcc ttacagaggc gatctcagaa taagcaagtc tgaattccag	420
241	atcaccatct gcaagcataa aggaggttcc tcccggcctc catgccggtg cggagccaca	480
242	gaagactcca gagtcattgt tgtcggtgtt gaaaatgggt tgcccgtcca ctttgatgag	540
243	tcctttatca ctccacgcca ctage	565
245	<210> SEQ ID NO: 15	
246	<211> LENGTH: 421	
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248	<213> ORGANISM: Bovine	
249	<400> SEQUENCE: 15	
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251	cacctcagac aaggagcgga agaagatggg tcgggagctt atgcaggtgg ttctggctcg	120
252	caagcccaag atgtgcagct tcctggagtg gagggacctc aaagtgtgtc ataagagata	180
253	cgccagcctc tacttctgct gtgccatcga gggccaagac aatgagctca tcacgctgga	240
254	gctgatccac cgatacgtgg agtccttggg caaatacttt ggcagcggtt gcgagctgga	300

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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:76; N Pos. 177

Seq#:77; N Pos. 118

Seq#:150; Xaa Pos. 48,68,109

Seq#:198; Xaa Pos. 40

Seq#:207; Xaa Pos. 59

Seq#:208; Xaa Pos. 39

Seq#:255; Xaa Pos. 92

**VERIFICATION SUMMARY**

DATE: 03/01/2005

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Input Set : N:\Crf4\Refhold\10\_folder\J617316.raw

Output Set: N:\CRF4\02282005\J617316.raw

L:1210 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:76 after pos.:120  
L:1223 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:77 after pos.:60  
L:2461 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:150 after pos.:32  
M:341 Repeated in SeqNo=150  
L:3690 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:198 after pos.:32  
L:3937 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:207 after pos.:48  
L:3955 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:208 after pos.:32  
L:5045 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:255 after pos.:80